State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

Office of the Governor
PUBLIC LANDS POLICY COORDINATION

JOHN HARJA
Director

May 21, 2008

Mr. Brian Ferebee
Uinta National Forest
88 West, 100 North
P.O. Box 1428
Provo, Utah 84603

Re: Comments on Draft EIS for Oil & Gas Leasing

Dear Mr. Ferebee:

Thank you for the opportunity to review and comment on the *Draft Environmental Impact Statement for Oil and Gas Leasing on the Uinta National Forest* (DEIS). The state believes that cooperation between land managers and regulatory agencies will lead to the best possible final product. The state's experience is that a high level of cooperation and coordination generally results in better decisions. We look forward to a cooperative relationship that allows us to advance our mutual interests.

The Public Lands Policy Coordination Office (PLPCO) is tasked by state law to ensure that the positions of the state and its political subdivisions are considered in the development of public lands policy. To this end, PLPCO collected, reviewed and coordinated input from various state agencies and prepared these comments on behalf of the state. We encourage the Forest Service to also consider comments submitted by local governments.

The comments and concerns provided below are offered in the spirit of cooperation. The state recognizes the DEIS is but one step in a dynamic process that will continue into the future and reserves the right to supplement these comments as necessary. The state looks forward to resolution of the issues set forth below as a cooperating agency through the preparation of the Final EIS.

Although the state is committed to a cooperative relationship with all of our federal partners, we are obligated to note our disappointment with the Forest's treatment of our prior input. Many of the comments provided below were submitted previously. While we recognize that reasonable people can disagree about how to balance the important resources at issue, these differences do not justify for the limited attention

given to our input. We remain hopeful that the Forest will give more treatment to the state's input as it moves forward.

Range of Alternatives

The State of Utah remains concerned that the range of alternatives is unreasonably narrow. The range of alternatives contained in the DEIS precludes determination of whether "[l]ease stipulations will be . . . only as restrictive as necessary to protect the resources for which they are applied."[1]

For programmatic type decisions such as leasing suitability, the range of alternatives normally evaluates various ways of balancing multiple uses of our public lands. For example, in its *Western Uinta Basin Oil and Gas Leasing EIS* (1997) (hereinafter *WUB EIS*), the Uinta and Ashley National Forests carefully considered five alternatives. Two of these alternatives contemplated less restrictive leasing than called for under the Proposed Action; two alternatives were more restrictive in order to better protect other resources. This broad range of alternatives allowed the Forest Service to assess what stipulations were necessary to protect various resources and ultimately allowed the Forest Supervisors to mix and match components across alternatives as needed to balance the Forest Service's multiple use mandate.

The Uinta National Forest's current three alternative approach looks in only one direction, beginning with stipulations contained in the current Forest Plan, then evaluating more restrictive lease terms. Stipulations contained in the Forest Plan were brought forward from the *WUB EIS*.[2] Both the Forest Plan and *WUB EIS* predate the Energy Policy Act as well as the memorandum between the Forest Service and Bureau of Land Management regarding energy implementation. Accordingly, it does not appear that the prescriptions analyzed in the *WUB EIS* and Forest Plan have been evaluated to determine whether they the stipulations are "only as restrictive as necessary to protect the resources for which they are applied." We encourage the Forest Service to, as set forth in the National Energy Policy Recommendation and as directed by the Chief of the Forest Service, "...examine land status and lease stipulation impediments to federal oil and gas leasing, and review and modify those where opportunities exist (consistent with the law, good environmental practices, and balanced use of other resources)."[3] The range of alternatives should facilitate, rather than hinder, this required analysis.

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[1] Energy Policy Act of 2005 as codified at 42 U.S.C. § 15922(b)(3)(C). *See also* Memorandum of Understanding between United States Department of the Interior Bureau of Land Management and United States Department of Agriculture Forest Service Concerning Oil and Gas Leasing and Operations, Forest Service Agreement No. 06-SU-11132428-052 (April 2006).

[2] *See Final Environmental Impact Statement for the 2003 Land and Resource Management Plan, Uinta National Forest* (2003) at 1-21 ("Availability for moderate to high areas of the Forest made as a result of the Western Uinta Basin Oil and Gas EIS will be brought forward in the Forest Plan revision except when inconsistent with land allocation decisions made in response to other issues.").

[3] Forest Service Implementation of National Energy Plan, attached to Memorandum from the Chief of the U.S. Forest Service, Dale Bosworth, to Regional Foresters, Station Directors, Area Director, IITF Directors, [and] WO Staff re: Forest Service Energy Implementation Plan (Aug. 6, 2001).

Multiple Use Management and the Feasibility of Alternatives

It is unclear whether any alternative advances multiple use objectives. Table 2.8 indicates that under the Modified Resource Based Stipulations Alternative, only 26-percent of the approximately 897,400-acres managed by the Forest Service would be available for lease, and none of this area would be available under standard lease terms and conditions. Table 2.8 also indicates that under the Proposed Action, 53 percent of the analysis area would be subject to an NSO stipulation and less than four-percent of the area would be available for lease under standard lease terms and conditions.

It appears that the action alternatives may not reflect the practical realities of oil and gas development. The lands that would remain open for leasing under the Preferred Alternative may be infeasible to develop. For example, it appears that lands open for leasing are so fragmented that there will be no tract large enough to attract an exploration company to invest in a lease. Likewise, large expanses of NSO lands may not be feasibly developed because of technological constraints on the lateral extent of directed horizontal drilling.

We encourage the Forest to evaluate carefully the viability of its alternatives. Viable alternatives deserve careful consideration. However, if any alternative is either infeasible or does not advance federal multiple use policy, we encourage the Forest to carefully document the basis for that conclusion, not carry that alternative forward for detailed analysis, and proceed with more appropriate alternatives.

Proposed Stipulations

The DEIS does not disclose requirements applicable to areas managed under a Controlled Surface Use (CSU) stipulation. By failing to define the content of a CSU stipulation, resource specialists lack a sufficient basis to determine whether such constraints are sufficient to protect sensitive resources. Additionally, potential lessees must guess at the extent of the encumbrance to a lease and interested parties must guess at the adequacy of resource protections.

The DEIS proposes lease stipulations for each alternative based on both Recreation Opportunity Spectrum (ROS) classification, and based on "resource area" specific concerns. Pages 2-6 through 2-9 of the DEIS identify CSU stipulations applicable to certain resource areas for the No Action Alternative. The DEIS does not, however, discuss CSU stipulations applicable to resource areas for either action alternative. Moreover, the DEIS does not identify or discuss CSU stipulations applicable to areas based on the ROS classification for any alternative. While pages 2-9 and 2-13 of the DEIS state that leasing stipulations for the Proposed Action and Modified Resource-Based Stipulations Alternatives are based on the "leasing stipulations outlined on pages 3-7 and 3-8 of the LRMP," the referenced pages do not discuss specific requirements applicable to individual resources or areas. Furthermore, the *WUB EIS* and LRMP do not discuss the CSU stipulations applicable to lands based on their ROS classification.

As the DEIS notes at the outset, a CSU stipulation "is used to identify constraints on surface use or operations which may otherwise exceed the mitigation provided by

Section 6 of the SLT (*see* BLM Form 3100-11 in Appendix A), existing regulations, and Onshore Oil and Gas Orders. . . . *The stipulation should clearly describe the activity to be controlled or what operational constraints are required.*"[4] The DEIS's absence of a clear description of the unique operational constraints applicable to CSU areas seriously undermines the disclosures and analysis contained in the DEIS. The Forest should specifically state what would be required under each CSU stipulations and address the effect of these specific requirements as part of its effect analysis.

Reasonably Foreseeable Future Development

The state is concerned by the incomplete and inaccurate oil and gas occurrence potential analysis. The state also questions whether the Reasonably Foreseeable Development Scenario (RFDS) reflects enough exploratory drilling to allow for adequate testing of the prospective plays in the next 15 years. This problem starts with the RFDS, which is flawed in its presentation of the oil and gas occurrence potential. Without an accurate assessment of oil and gas occurrence potential there can be no accurate assessment of leasing potential, let alone the environmental consequences of exploration and development.

Oil and gas occurrence potential should include a discussion of the plays/petroleum systems defined by the U.S. Geological Survey (USGS) in their oil and gas assessments of Utah. While the RFDS includes discussions of the USGS plays/petroleum systems, it does not use this information to develop a comprehensive occurrence potential analysis for the Forest. The RFDS does not discuss or rate oil and gas occurrence potential for each analysis unit, but talks about past exploration and the potential for future exploration without providing the necessary geologic framework of the occurrence potential for each identified play/petroleum system.

The Forest apparently defined oil and gas potential areas as areas where known reservoir formations are exposed at the surface, rather than based on known or projected subsurface extent, as depicted by the USGS assessment unit (AU) boundaries. By limiting the occurrence potential area to reservoir formation outcrops, the RFDS understates the area with oil and gas occurrence potential. The state suggests adopting the BLM's mineral occurrence rating system, a summary of which is attached.

As presently written, only the Green River and central Utah hingeline plays/petroleum systems are depicted on Appendix B maps. The state would rate each of these two assessment units (AUs) as having high occurrence potential (H) for oil and gas deposits, with the Green River AU having a C level of certainty of occurrence, and the undrilled Sevier Thrust AU having a B level of certainty.

The Sevier Thrust AU was speculative when first defined by the USGS in its 1995 National Oil and Gas Assessment. With the discovery of the Covenant field, and two recently announced potential discoveries in 2008, this AU is no longer speculative and should not be labeled as such. Although maps credit the UGS as having defined this AU, it was originally defined by the USGS and should be correctly noted as such.

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[4] *DEIS* at 1-14 – 15 (emphasis added).

Due to the limited number of past oil and gas wells drilled on the Forest and because most of them were drilled to relatively shallow depths, much of the deeper potential of the UNF is untested and less certain. The Mesaverde AU has been drilled in a few wells and would be rated by the state as having high occurrence potential (H) with a certainty level of C. The state would also rate the Mancos Mowry and Phosphoria AUs as having high occurrence potential (H), but with a certainty level of B. The Neogene Basin and Ranges and Other Structures AUs would be rated as Moderate to Low (M- L) in occurrence potential with as certainty level of B.

The RFDS also states that restrictions on access, the lack of past oil and gas production within or adjacent to the UNF, and recent successful exploration in the Uinta Basin and Central Utah Overthrust Belt provide no direct encouragement for leasing and exploration drilling on the Forest.[5] These statements disregard the continued active leasing, data acquisition, and drilling that is taking place in the Central Utah Overthrust Belt. Similarly, the decision to not acknowledge or consider unconventional oil and gas resources leads to an underassessment of development potential. The state continues to receive seismic project applications and APDs in this play.

The RFDS also states that a new natural gas distribution hub in Western Colorado will not tie into the Uinta Basin.[6] This statement conflicts with published reports as both Questar and Colorado Interstate will have tie-in points for the new hub and both are taking gas from the Uinta Basin. It is therefore expected that this new hub will directly impact the "Gas Bubble" in the Uinta Basin. Based on statements concerning this new hub and planned expansion, the Uinta Basin could be delivering natural gas to the eastern markets through Ohio by the end of 2009.

Chapter 1 notes that there is active exploration in the vicinity of the Payson Unit, that there is multiple play potential within the Spanish Fork Canyon Unit, and that the Diamond Creek Unit has geology similar to areas experiencing active exploration. Despite these factors, one well is projected for each of these units.[7] This assumed level of exploration under represents the area's true potential and appears insufficient.

To truly evaluate the oil and gas occurrence and development potential, each of the identified petroleum plays/systems areas, or assessment units, should be depicted on maps and their occurrence potential should be rated individually. The only oil and gas potential map presented in the RFD is the second map in Appendix B, entitled "Uinta National Forest Reasonably Foreseeable Development Scenario." On this map there are orange colored, cross-hatched areas labeled in the explanation as "Oil & Gas Potential (3)", but nowhere is this potential discussed, defined, or rated in the text of the appendix. There is simply a note (3) on the map that says "Geologic formations with known oil or recognized potential to contain oil and gas reservoirs in the Uinta Basin to the east."

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[5] *DEIS* at B-19.
[6] *DEIS* at B-19.
[7] *DEIS* at 1-25.

If the Forest provides only one map of oil and gas occurrence potential, it should do so by combining the occurrence potential of the individual AU's into one map and giving the highest occurrence potential of any coincident AU in the areas with overlapping AUs. Such a single occurrence map would have the areas underlain by the Green River and Mesaverde AUs labeled as H/C, the area underlain only by the Sevier Thrust, Mancos-Mowry, and Phosphoria AUs would be rated H/B, and the areas underlain by the Neogene Basin and Basin and Ranges Other Structures AUs rated as M-L/B for oil and gas occurrence potential. Such an oil and gas occurrence potential map would show that a much broader area of the UNF has high occurrence potential for oil and gas and would provide an estimate of the varying oil and gas occurrence potential under different parts of the forest than is currently depicted in Appendix B and the rest of the DEIS.

The RFDS also recognizes seismic exploration as a necessary precursor to drilling activities. For example, chapter 1 states: "Future exploration is likely to begin with seismic surveys since past exploration, apparently based in large part on observed surface-exposed geologic structures, failed to result in a discovery."[8] However, the DEIS foregoes analyzing the impacts of seismic exploration.[9] The RFDS and DEIS should assess the impacts of seismic exploration along with the impacts of expected drilling over the next 15 years. The absence of an analysis of seismic exploration methods is a critical omission, given the dependence of modern exploration on seismic methods. Potential lessees will want to know where they can and cannot conduct seismic surveys before they make a decision to lease.

Discussions regarding future development are in conflict. For example, the Summary states: "Potential oil and gas reserves are not expected to be irretrievably committed under all alternatives, because the exploratory wells are generally not anticipated to result in full-field development."[10] However, Chapter 1 states: "The RFDS forecasts the potential for a single well moving on to full-field development or production,"[11] and Chapter 4 notes: "The RFDS concludes that a discovery is possible, and therefore a full-field development or production could occur in the foreseeable future."[12] Despite recognition of potential full-field development, the DEIS does not evaluate the impact of such development. For example, the effects analysis for Terrestrial and Aquatic Flora and Fauna is limited to impacts likely to result solely from exploration.[13] Similarly, the cumulative effects discussion for soils and geologic resources states: "If any wells drilled resulted in a commercial discovery, further analysis

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[8] *DEIS* at 1-24.

[9] For example, the effects analysis for Terrestrial and Aquatic Flora and Fauna does not discuss effects of seismic exploration. *See DEIS* at 4-115 – 4-144.

[10] *DEIS* at xxxiii. *See also*, 4-216 ("Potential oil and gas reserves are not expected to be irretrievably committed under all alternatives, because the exploratory wells are not anticipated to result in full-field development.").

[11] *DEIS* at 1-26.

[12] *DEIS* at 4-10.

[13] *See e.g. DEIS* at 4-125 (discussing effects of the proposed action alternative).

of newly available information would be required to determine the extent of impact due to full-field development."[14]

On a related note, Chapter 1 indicates that a discovery may not lead to construction of additional well pads and states that at the Covenant Field, production is occurring from multiple wells at a single well location.[15] While it is true that the Covenant Field utilizes directional drilling and multiple wells from some pads, the Forest should clarify that there are currently multiple pads, some with more than one well. It is also important to note that while directional drilling can effectively reduce the number of pads, directional drilling involves larger pads as well as an increase in the level of activity beyond that associated with exploration.

Finally, commercial development should be considered reasonably foreseeable and evaluated, to the extent possible, at the leasing phase because deferring NEPA analysis to the SUPO or APD phase eliminates the opportunity to conduct a meaningful cumulative effects analysis. Categorical exclusions could be utilized to allow exploration or small-scale development. If utilized repeatedly, this could result in cumulative impacts significantly affecting sensitive resources. Even an EA may not afford an opportunity to adequately address the cumulative effects of complicated issues like air quality of wildlife habitat fragmentation.

New Information and Changed Conditions

The DEIS states that the only information that has changed since 2003 and that is addressed in the Proposed Action pertains to municipal and culinary water sources. A number of important changes have occurred over the past five years that deserved consideration in the Proposed Action.

The Covenant Field was discovered and went into production after release of the Uinta National Forest LRMP. Two discoveries along the Sevier Frontal Play also occurred earlier this year. This information has a direct impact on likely future interest in oil and gas leasing on the Forest that should be addressed in the RFDS and carried forward in the alternatives.

The past five years have produced a significant increase in knowledge regarding sage grouse, the impact of oil and gas development on sage grouse, and how best to manage for oil and gas development within sage grouse habitat. This information is not reflected in the management prescriptions for any alternative. The state's concerns and recommendations regarding sage grouse are discussed more specifically below.

The past five years have also seen significant changes regarding air quality. In 2006, EPA revised the 24-hour National Ambient Air Quality Standard (NAAQS) for particulate matter smaller than 2.5 micrometers in diameter ($PM_{2.5}$) downward to 35 $\mu g/m^3$. Earlier this year, EPA revised NAAQS for ozone down to 0.075ppm. As discussed in more detail below, it is state policy to request federal land managers apply

[14] *DEIS* at 4-43.
[15] *DEIS* at 1-24.

certain performance standards as conditions of approval for all applications for permits to drill oil or gas wells. The state has also established policies for modeling emissions associated with oil and gas exploration and development. In light of these policies, the state requested incorporation of certain performance standards and modeling requirements into the proposed action.

Split Estate and Strawberry Project Lands

Pages 1-6 through 1-8 indicate that approximately 56,775 acres of Strawberry Project lands are excluded from the EIS. This area corresponds to the area transferred to the Uinta National Forest in 1988 via Public Law 100-563. That act modified the Uinta National Forest boundary and transferred administrative jurisdiction to the Secretary of Agriculture. Section 4(c)(1) of that act also states: "Notwithstanding any other provision of this section, the association shall retain contractual rights to issue oil, gas, coal and mineral leases, excluding sand and gravel, on the Project Lands."

Based on P.L. 100-563 and as disclosed in the DEIS, the Strawberry Water Users Association (SWUA) retains contractual rights to issue oil and gas leases, and "the Forest Service has jurisdiction over the administration of surface uses of the Strawberry project . . . the UNF would be responsible for issuing any surface use authorization for exploration, development, and production of minerals on Strawberry Project Lands."[16] There appear to be a significant benefit to evaluating surface use stipulations for Strawberry Project Lands as part of the current analysis. Such analysis and disclosure would provide valuable information regarding the feasibility of lease development to potential lessees as well as ease the Forest's future work load. In light of these economies of scale, we encourage the Forest to consider evaluating stipulations for Strawberry Project lands as part of the ongoing NEPA analysis.

Water Quality

The Utah Division of Water Quality reviewed the DEIS and concluded that applicable water quality standards may be violated unless appropriate Best Management Practices (BMPs) are incorporated to minimize the erosion-sediment load to the waterbodies within the project area that are listed on the 303(d) list and have established TMDLs for certain pollutants. These waterbodies include the American Fork River and some tributaries (from diversion at mouth of canyon to Tibble Fork Reservoir), Soldier Creek, Strawberry Reservoir, Mill Hollow Reservoir, and Big East Lake. The state strongly recommends that appropriate water quality parameters be monitored to assess BMP effectiveness, including sediment control.

Impacts from runoff may occur during oil and gas exploration or development and may include the degradation of water quality, increased quantities and intensities of peak flows, channel erosion, flooding, and geomorphologic deterioration that may directly or indirectly cause an inability of streams to achieve ecological balance and retain their designated beneficial uses. Emphasis in design should avoid concentration of storm water to fewer drainage locations. The intent should be to allow or mimic the natural flow patterns to the degree possible. Adequate stream flows should be considered so that

[16] *DEIS* at 1-7.

impaired streams can regain designated beneficial uses. Adjacent riparian areas and wetlands should be protected from degradation during all phases of the project to maintain water quality.

The state also requests the following conditions of approval be included in the EIS and ROD:

1. Whenever an applicant causes the water turbidity in an adjacent surface water to increase by 10 NTUs or if turbidity is visibly increased, the applicant shall notify the Division of Water Quality.

2. Applicant shall protect any potentially affected fish spawning areas.

3. Adequate stream flows shall be considered to maintain the water quality in all adjacent streams, creeks, lakes and wetlands.

4. Well pads and access roads should be bermed and constructed with road base gravel to reduce erosion during storm events and snow melt.

5. The following permits from the Division of Water Quality are required prior to the construction phase of the project:

   a. Construction activities that grade one acre or more per common plan are required to obtain coverage under the Utah Pollutant Discharge Elimination System (UPDES) Storm Water General Permit for Construction Activities, Permit No. UTR100000. The permit requires the development of a storm water pollution prevention plan to be implemented and updated from the commencement of any grading activities at the site until final stabilization of the project. A fact sheet describing the permit requirements and application procedures is located on our web site: www.waterquality.utah.gov.

   b. Dewatering activities, if necessary, may require coverage under the UPDES General Permit for Construction Dewatering, Permit No. UTG070000. The permit requires water quality monitoring every two weeks to ensure that the pumped water is meeting permit effluent limitations, unless the water is managed on the construction site.

   c. A construction permit will be required if a wastewater treatment facility is constructed on the site to collect and/or treat sewage effluent. A biosolids permit will be required if biosolids (sewage sludge) is treated on-site.

   d. A UPDES permit will be required for discharge of wastewater, process water or any other discharge conveyed from the site.

In addition to these permitting requirements, the Division of Water Quality requires the submission of plan elements for permanent storm water runoff control and

treatment during facility operations and after the site is abandoned. The plan should include BMPs that will require revegetation with native plants in disturbed areas and a buffer strip along roads, stream banks and wetlands to filter petroleum, sediments and other contaminants from entering waters of the State, where applicable.

Air Quality

The state is concerned about air quality, and has been delegated regulatory primacy pursuant to the terms of the Clean Air Act. State concerns are set against a backdrop of an upward trend in ozone. In addition, in 2006 the Environmental Protection Agency revised National Ambient Air Quality Standards (NAAQS) for small particulates ($PM_{2.5}$), and in March 2008 revised the NAAQS for ozone. These factors suggest proactive efforts between the state and the Forest Service should begin now. As part of these efforts, the state suggests adopting both interim measures and initiating a coordinated approach to assessing and protecting air quality in Utah after the adoption of the Final EIS. This coordinated approach would include installation of additional monitoring stations, collection of additional baseline data, and creation of robust modeling programs for analysis of future project proposals.

As an interim measure, the state encourages the Forest to request that oil and gas operators apply Best Available Control Technology. We also encourage the Forest to adopt emission standards for compressor engines that are no less effective than those implemented by neighboring states and jurisdictions. Performance standards will continue to evolve and alternative measures may be used, provided they are at least as effective as those in place at the time of site-specific action authorization. Performance standards representing the current regional standard can be found in the *Four Corners Air Quality Task Force Report of Mitigation Options, DRAFT: Version 7*, June 22, 2007. The BLM Farmington Field Office, San Juan Service Center, and San Juan National Forest impose the Task Force's suggested standards as conditions of approval. These standards are 2 g/bhp-hr for engines less than 300 HP and 1 g/bhp-hr for engines over 300 HP. The state encourages the Forest to impose these emission standards as lease conditions for all new and relocated engines, and as conditions of approval for all new applications for permits to drill (APDs). These standards would positively impact air quality, facilitate continued action, and would be consistent with neighboring state jurisdictions.

For the future, the state encourages all agencies – federal, state, tribal, and local – to collaboratively identify and address air quality related concerns. The state encourages these stakeholders to come together through an entity such as the Natural Resources Coordinating Council, to develop more comprehensive analyses and region-wide modeling, and to assess the impacts of plan-based decisions on air quality in Utah. Pending completion of comprehensive air quality analyses and region-wide air quality modeling, we encourage the Forest to work with stakeholders to research additional interim measures, such as those presented by the Four Corners Air Quality Task Force, to determine which emission mitigation strategies should be required as future lease and APD conditions. The state also requests the Forest's assistance with installation of

additional air quality monitoring stations. Additional stations will improve our understanding of current air quality and facilitate future management.

Specifically, as the Forest makes future planning level decisions and major site-specific decisions to implement the EIS, we request that air quality analyses include:

• Photochemical modeling to evaluate formation of ozone and particulate matter. Models used for the analysis of ozone and $PM_{2.5}$ should include the chemistry module needed to estimate the formation of secondary pollutants, *e.g.*, a photochemical grid model such as the EPA's Community Multi-scale Air Quality model (CMAQ).

• Project evaluations should assume, within the reasonably foreseeable development scenarios, that leasing and exploration will result in full-field development. Modeling should reflect reasonably foreseeable full-field development scenarios.

• Existing emission sources may have coincident impacts. This necessitates a comprehensive understanding and evaluation of emissions from other nearby existing or planned sources.

• Modeling should reflect anticipated worst-case meteorological conditions for each dispersion scenario, *e.g.*, the meteorological condition for high near-field impacts should be different than the meteorological conditions leading to high long-range transport.

• The analysis should assess attainment of all applicable air quality related requirements and standards. Specifically, the evaluation should address all criteria pollutants with specific emphasis on $PM_{2.5}$, ozone, and ozone precursors.

• The state is concerned about likely revisions to the NAAQS for ozone. Volatile Organic Compounds and NO_X are precursors to the formation of ozone. All sources of ozone precursors should be considered in future analysis.

• Regional haze is also a concern, especially as it affects Class I areas. The analysis should carefully consider impacts to visual resources and other air quality related values identified by the federal land managers.

In addition to these programmatic comments, the Division of Air Quality's (DAQ) review noted that Chapter 3 does not apply the correct NAAQS for ozone.[17] As mentioned earlier, the 8-hour ozone standard was revised in March 2008. To attain this standard, the 3-year average of the fourth-highest daily 8-hour ozone concentration measured at each monitor must not exceed 0.075 ppm.

DAQ also noted that the impact analysis did not use dispersion modeling to estimate impacts, instead assuming impacts would be similar to the WUB FEIS. There is no discussion why the WUB FEIS analysis was similar and should be used in this DEIS.

[17] *DEIS* at 3-147, Table 3.33

DAQ is also concerned that there is no analysis of well pad development scenarios or the impact of development near non-attainment areas. The cumulative impact of multiple well pads and connecting unpaved roads needs to be evaluated. Without a proper cumulative analysis in areas of high background, it is unclear what the impact on air quality would be as a result of the leases.

Wildlife

Greater Sage-Grouse

There are 2 active leks within the boundary of the Vernon Management unit, and 3 more known leks within close proximity to the Vernon unit. There is also 1 active lek in Strawberry Valley. The Strawberry Valley population is currently estimated to contain about 500 birds. Sage-grouse from the Strawberry Valley population winter well to the east of the Uinta National Forest on mostly private and state lands.

The state is in the process of developing a comprehensive avoidance and mitigation strategy to address the kinds of impacts to sage-grouse that are likely to result from oil or natural gas exploration and development. We anticipate formalizing this strategy within the next 30-days and will provide the Forest with a copy of the state strategy at that time. Accordingly, our discussion of sage-grouse is only intended to inform the Forest of the state's tentative position and alert it to potential issues. Formal recommendations will follow shortly.

Other Bird Species

The Division of Wildlife Resources (DWR) noted several other Utah Species of Concern in the Vernon area. According to DWR's records, the short-eared owl, black swift, Lewis's woodpecker and long-billed curlew occur in the proposed leasing area. For these species, we recommend surveys be conducted and nests be avoided during construction. The following bird species have more specific recommendations:

• Burrowing Owl – Species has been recorded nesting on the Vernon District. If nests are located, construction efforts and other forms of disturbance should be avoided from March 1 through July 15 or the construction activities should occur no closer than 1/2 mile from this nest during this period.

• Ferruginous Hawk – This species has been recorded nesting on the Vernon District. If nests are located, either all construction efforts and other forms of disturbance be avoided from March 1 – July 15 or construction activities should occur no closer than 1/2 mile from this nest during this period.

• Peregrine Falcon – Several nests are documented in the following areas: Slate Canyon above Provo, at the mouth of Provo Canyon, falcon observed at Bridal Veil Falls, Rock Canyon, and Little Rock Canyon above Springville. The state recommends observance of the *American Peregrine Falcon Recovery Plan.*

Big Game Species

The Currant Creek area has one of the higher population levels of mule deer across the state. There are also many elk inhabiting this part of Forest. While the Forest provides mostly summer range for elk and mule deer, there are also crucial elk winter habitats on Forest, for example located to the east of Currant Creek. Crucial moose winter habitats also occur throughout much of the Currant Creek area. To protect wintering animals, all reasonable measures should be taken to avoid and reduce the effects of surface disturbing activities from December 1 through April 15 within crucial winter habitats for big game. All reasonable measures should also be taken to avoid and reduce the effects of surface disturbing activities from May 15 through July 15 within identified fawning or calving habitats. DWR's crucial wildlife habitat data are based on more than 20 years of data collection and wildlife observations by field biologists. These data are available to the public on the DWR web site (http://dwrcdc.nr.utah.gov/ucdc/DownloadGIS/disclaim.htm) and should be considered for all alternatives. Maps showing each geographic area that are subject to timing limits, together with the specific timing limitation, should be included in the DEIS.

Seasonal Closures

Seasonal closures and other stipulations are used to reduce energy development impacts to big game and other wildlife. Although seasonal closures during construction activities provide short-term mitigation to wildlife, they are often insufficient as a long-term mitigation measure over the lifespan of a development such as an oil or gas field. Therefore, without substantial mitigation for lost or degraded habitat, seasonal stipulations alone will likely fail to protect the long-term viability of these wildlife populations. We suggest that mitigation for oil or natural gas exploration or development include rangeland and habitat restoration, noxious weed control, and other actions that provide new or enhanced wildlife habitats. The state requests that off-site mitigation in the form of habitat restoration be considered in the EIS and that the EIS include identification of potential areas for habitat enhancement. The Utah Partners for Conservation and Development (UPCD) have identified high-priority areas in need of restoration in sage-grouse, elk, and mule deer habitats across the State of Utah. Offsite mitigation for this project should include collaboration with the UPCD to ensure mitigation projects will be beneficial to species impacted by this project.

Essential Elements for Winter Drilling Mitigation

The State of Utah recently developed strategic recommendations for mitigating impacts to winter habitat. This strategy satisfies the two primary goals of energy-related mitigation policy as we see it: (a) producing ecological benefits for wildlife and watershed conditions and (b) supporting profitable development of oil & gas resources. While this strategy was developed for pending developments within the Uinta Basin, it could be applied in other locations around the state if 6 key mitigation principles are adhered to consistently.

Element #1 is to frame mitigation in a geographical context suited to addressing the types of concerns we would expect to encounter. Compensatory mitigation should be situated near impacted areas if good opportunities exist. We would urge a watershed-specific review of the ecological conditions, limitations, foreseeable development scenarios, and

mitigation options for oil and gas. Analysis of this kind is needed in other watersheds[18] where we might seek to expand large compensatory mitigation efforts for winter drilling. Using this kind of watershed approach, we envision a flexible system for designing and applying needed compensatory mitigation that enables winter drilling and simultaneously enhances wildlife and watershed conditions.

Element #2 is to gain public involvement to help identify issues in the watersheds of interest, early in the planning process. Public involvement leads to stronger, more fully informed, better supported decisions, although there can be a short term efficiency loss associated with public participation. Long term gains in mitigation effectiveness and land-use equitability, though, balance efficiency losses if public involvement is conducted to achieve a clear, purposeful end (*e.g.*, identifying the major environmental issues requiring first-priority attention in the watershed).

Element #3 is to use the best available scientific information to answer key questions. Efforts to evaluate oil and gas impacts on wildlife populations are seldom conducted within any kind of experimental framework, but rather tend to be short term, anecdotal summaries which unfortunately are comparatively useless in terms of our being able to draw from them any reliable conclusions about the underlying ecological processes. Properly designed experiments are needed to gain a useful understanding of how we might mitigate more effectively for wildlife impacts.

The results of one valuable study[19] indicated that seasonal restrictions were inadequate to mitigate for impacts to big game, at least in their Wyoming study area. Mule deer were displaced from their preferred habitats, moving into less desirable habitats, which would increase energy demands on mule deer during their most energetically demanding season, likely influencing fawn survival and recruitment of mule deer into the adult population (although the experiment did not assess mule deer survival). The science indicates that seasonal drilling restrictions are not as effective as we would like them to be in mitigating for wildlife impacts.

Element #4 is that mitigation should be approached in a specific sequence. The necessity of a sequenced approach to mitigation stems from the principle that we must avoid and reduce all of the on-site effects which reasonably can be avoided before we try to compensate for unavoidable effects. It is only after taking all reasonable steps to avoid and reduce impacts that we should assess compensatory mitigation options. Some managers consider the steps to avoid and reduce impacts as simply the standard operating procedures which should always get first attention, reserving the term "mitigation" solely for compensation of unavoidable impacts.

The offsite placement of compensatory mitigation in large, well-managed projects with secure long term management provisions in place, up front, can be preferable to small on-site "in kind" options which have failed many times in providing the intended long term compensatory benefits. Offsite compensatory mitigation may be preferable when on-site

[18] Off-site options within the same hydrologic unit (based on the 8-digit U.S. Geological Survey Hydrologic Unit Code, or a substitute) as the impact site are strongly recommended.

[19] Sawyer *et al.* 2006. Winter Habitat Selection of Mule Deer Before and During Development of a Natural Gas Field. Journal of Wildlife Management. 70(2): 396-403.

compensatory options are extremely limited, or less effective than offsite options at addressing wildlife and watershed needs. Examples of this might include using directional drilling (where geotechnically feasible) and clustering wells in a reduced wellpad-count configuration, allowing road networks and transmission infrastructure to be scaled down commensurate with the degree of clustering. If we are not doing everything we can to avoid impacts near the original impact site, the appropriateness of compensating offsite can be challenged. Since offsite compensation for impacts is central to the mitigation strategy we are espousing, it is important to first avoid and reduce effects. Otherwise our strategy would be open to the legitimate complaint that offsite compensation could actually facilitate unnecessary destruction of natural resources near the development sites.

Element #5 is to use an assessment of ecological needs within the watershed to drive how compensatory mitigation is designed and situated. Mitigation projects and the sites for mitigation need to be selected on the basis of how specific restoration projects would address watershed needs. Where appropriate and practicable, compensatory mitigation decisions should be made from a watershed perspective, so that compensatory mitigation follows from the assessment of ecological needs and identified public land-use values within the watershed.

Using existing regional teams of natural resource agency experts, local government officials, private, state, and federal land managers, and oil and gas industry representatives, we have the ability to help answer questions about watershed needs and mitigation options. Large-scale mitigation projects would benefit from a multiple-agency process to bring more and better expertise and collaboration into the planning, approval, and oversight of habitat restoration mitigation projects. Public involvement efforts could be expanded, although public meetings[20] are already being held to assess needs and shape current planning directions.

The watershed assessment may consist of an informal analysis of available data on regional environmental issues, trends in vegetation or other watershed conditions, and the prioritization of ecological needs and restoration opportunities. The continuing involvement of resource specialists is required to ensure the analysis meets the need for identifying projects which can address specific regional environmental needs, and bring maximum ecological benefits to the watershed.

Element #6 is to monitor performance toward clearly stated objectives for the individual mitigation project, with defined performance standards which are documented up front in an authorizing instrument, stipulating who is responsible for performing evaluation and submitting reports on elements of the mitigation effort.

[20] The Utah Partners for Conservation and Development, a statewide consortium of natural resource agency leaders, formed 5 regional teams in 2004 specifically to address Utah's most significant ecological challenges, principally vegetative succession affecting watersheds and wildlife habitat. The "Watershed Restoration Initiative" is led by the Partners and their regional teams chaired by local government, agency land managers, and sportsmen/conservation group leaders. The watershed restoration partnership thus established hosts regular public meetings and could serve as a nearly ideal reviewing body for large-scale mitigation arrangements proposed within various watersheds.

We feel, in conclusion, that this 6-step strategy would provide compensatory mitigation in an efficient, predictable, economically and environmentally responsible manner. Improving the performance of mitigation projects through better site selection and long term monitoring is, in our view, a better way of going about the business of providing compensatory mitigation. The regular monitoring and reporting of performance takes place, as an integral element of the compensatory mitigation package, to document that compensation sites achieve the necessary and intended ecological performance. This would allow us to demonstrate mitigation success in a systematic, objective reporting of performance. We want to use the best available information to support these kinds of decisions, and gather sufficient information to demonstrate successful mitigation. In such an objective-driven public process, critics would be forced to either come up with better ideas and better information to shape the public decisions, or they would have to concede that we had settled upon the best identified options. We look forward to working more closely with your office as we begin putting this mitigation strategy into practice.

Fish

Colorado River cutthroat trout (CRCT) is protected under the Colorado River Cutthroat Trout Conservation Agreement and Strategy, of which the U.S. Forest Service and DWR are signatories. CRCT are found in streams throughout parts of the Forest, particularly, they occupy the West Fork of the Duchesne River as well as Currant Creek Reservoir and its tributaries. These populations are pure strain CRCT used as a source of broodstock in native cutthroat trout production by DWR.

UDWR, in coordination with the Forest Service, is currently constructing a fish barrier to limit the upstream movement of whirling disease to protect these CRCT populations. Whirling disease is present in the lower sections of the West Fork of the Duchesne River. Any increase in human activity in the area, especially activity involving the movement of water, will likely increase the spread of whirling disease. Also, any increased sediments in streams could affect cutthroat trout spawning success and so we recommend that no activity be allowed that would increase sediment loads in streams.

The Bonneville cutthroat trout (BCT) is protected under the Bonneville Cutthroat Trout Conservation Agreement and Strategy, of which the U.S. Forest Service and DWR are signatories. The DEIS mentions "remnant populations" of Bonneville cutthroat trout. In 2006, BCT were restored to 21 miles of stream in the Diamond Fork drainage and so this population is not to be considered a remnant population. BCT are currently undergoing a 12-month review by the U.S. Fish and Wildlife Service to determine whether the species will be listed under the Endangered Species Act.

The Southern leatherside chub, a Utah Species of Concern, occurs in Diamond Fork, and Spanish Fork (Spanish Fork River, Soldier Creek, Thistle Creek). Any increased sediments in streams could affect leatherside chub spawning success. The state recommends avoiding crossing rivers with heavy equipment whenever possible. If it is necessary for equipment to cross the river, DWR requests the opportunity to clear the stretch of river prior to any construction activities.

Bats

Townsend's big-eared bat and fringed myotis are both Utah Species of Concern and occur within the area proposed for leasing. The state recommends that oil and natural gas development should not occur in or on mine entrances where these species roost. We also recommend that, if and when there are mine closures, surveys be conducted of the mines and bat gates be installed.

Amphibians

The western toad (also known as boreal toad) presently occurs in Strawberry Valley, and Columbia spotted frog populations are known to occur in Diamond Fork, the Upper Provo River (above Jordanelle), the Middle Provo (between Jordanelle and Deer Creek), and in Wallsburg/Main Creek. Construction should be avoided during the breeding season from April 1st – June 31st. If construction is unavoidable, DWR requests the opportunity to clear the area prior to any construction activities.

Other

The states comments regarding wildlife pertain to section 4.9 of the DEIS. In general, without knowing where specific wells would be placed or how much area will be affected, it seems unreasonable to state that any effects would be negligible. If all of the acres under the preferred scenario are leased and developed, the effects on many sensitive species could be quite significant, especially for localized populations of sensitive species such as the Columbia spotted frog.

Social and Economic Impacts

Oil and gas exploration, and subsequent development, have the potential to impact social and economic factors. As discussed above, it is important to consider the reasonably foreseeable consequences of exploration, including subsequent development, in any assessment of consequences. While it is admittedly difficult to project production volumes and therefore difficult to estimate impacts quantitatively, more disclosure is needed to, at a minimum, identify potential impacts. The decision maker and affected local communities would benefit from a narrative discussion of the types of impacts that can occur with oil and gas development and a conceptual discussion of the level of impacts that may be experienced. While many impacts are likely to be imperceptible across the analysis area, they could be locally significant and should be discussed accordingly.

In addition to direct employment and wages paid during the exploration phase, exploration will require expenditures for drilling-related equipment and supplies. These expenditures, if made within the project area, could generate tax revenue for effected communities. Subsequent development and production will generate tax revenue for federal, state, and local governments. In particular, royalties will be paid to the federal treasury at a standard royalty rate of 12.5-percent; half of which will be remitted to state and local governments. Both the exploration and development phases will create demand for certain services, including but not limited to housing, that should be disclosed.

Public lands play an important role in defining the social fabric of local communities. Accordingly, the impacts of oil and gas development extend beyond the economic sphere, and often the most significant impacts at the local level are social rather then economic. We encourage the Forest to assess the full range of social as well as economic impacts. Specifically, we encourage the Forest to place more emphasis on analysis of the forest's social importance to surrounding communities. A more comprehensive understanding of what the Forest means to surrounding communities would help the reader understand what leasing decisions, and their reasonably foreseeable consequences, may mean to local residents. The BLM's RMP/FEIS for the King Range National Conservation Area provides a good example of how to document the connections between public lands and local communities. While we recognize that the level of detail contained in the Kings Range EIS is not necessary here, we encourage the UNF to incorporate similar context into this EIS.

The Bureau of Economic and Business Research at the University of Utah recently completed an economic impact study of the oil and gas exploration and production industry in the Uinta Basin titled *The Structure and Economic Impact of Utah's Oil and Gas Exploration and Production Industry: Phase I - the Uinta Basin*. The Phase I study shows that rapidly rising energy prices and the corresponding rise in oil and gas activity are causing an economic boom in the Uinta Basin. Utah State University is preparing a study titled: *Public Lands and Utah Communities: A Statewide Survey of Utah Residents*, to assess how public land management influences social and economic conditions. This study should be completed shortly and will be provided upon completion. These studies may be useful in assessing the social and economic impacts likely to result from the Forest's pending decisions.

Thank you for the opportunity to participate in the oil and gas leasing analysis. Please direct any other questions regarding this correspondence to John Ruple at (801) 537-9817.

Sincerely,

John Harja
Director

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BLM MINERAL POTENTIAL RATING SYSTEM

Level of Potential:

O. The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for the accumulation of mineral resources.

L. The geologic environment and the inferred geologic processes indicate low potential of accumulation of mineral resources.

M. The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly, and the known mines or deposits indicate moderate potential for accumulation of mineral resources.

H. The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The known mines and deposits do not have to be within the area that is being classified, but have to be within the same type of geologic environment.

ND. Mineral potential not determined due to lack of useful data.

Level of Certainty Ratings:

A. The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.

B. The available data provide indirect evidence to support or refute the possible existence of mineral resources.

C. The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral resources.

D. The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.